

ABSTRACT:

The invention relates to a measuring device for determining the mass rate of flow of a mass flow, especially for measuring a flow of bulk material. An impeller wheel (2), which is connected to the drive shaft (3) and which is driven at a constant rotational speed, is thus provided. The impeller wheel (2) deviates an axially impinged mass flow in a radial direction and provides it with a radial and tangential speed component. The drive shaft (3) includes a spur-toothed wheel (11) which engages with an intermediate spur-toothed wheel (21) and which is driven by a driving spur-toothed wheel (20, 31). The intermediate spur-toothed wheel (21) is mounted on a force transmitting arm (24) which is maintained in a radial position by a force measuring device. The drive shaft (3) is surrounded by a bearing bushing (4) which protrudes into the housing area (1) of the impeller wheel (2) and which is driven by a separate driving means (19, 32) at a rotational speed which corresponds to the rotational speed of the drive shaft (3). The bearing bushing (4) is rotatably mounted in a fixed part of the housing, such that basically no relative speed occurs between the drive shaft (3) and the bearing bushing (4).